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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,733	04/18/2005	Jonathon L Napper	NPW009NPUS	2306

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SILVERBROOK RESEARCH PTY LTD
393 DARLING STREET
BALMAIN, 2041
AUSTRALIA

EXAMINER	
AKHAVANNIK, HADI	
ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
03/11/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/531,733	NAPPER ET AL.	
	Examiner	Art Unit	
	HADI AKHAVANNIK	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14 and 17-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14 and 17-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/11/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/8/08 has been entered.

Response to Arguments

Applicant's arguments are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in further view of Sekendur (5477012). A second rejection is made in view of Lapstun et al. (6724374). Each rejection has a separate title.

Please see non-final rejection below.

Rejection #1

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 14, 17-22, 24-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebata (6226404) in view of Gierhart et al. (5730602, referred to as "Gierhart" herein) in further view of Schwartz (6215901) and in further view of Sekendur (5477012).

Regarding claim 14, Ikebata discloses a method of estimating the orientation of a segment of digital ink, the method including the steps of: measuring the azimuth of the pen at a sampling rate during writer generation of the segment of digital ink (see figure 1 item 2, column 4 lines 19-28 discloses sampling rates, and column 3 lines 35-41 discloses calculating the slant angle or azimuth of the pen);

and estimating the orientation of said segment using the measured azimuth of the pen at sampled points (by calculating the slant angle the direction of the character is also calculated as disclosed in column 4 line 59 to column 5 line 4. Also, see figures 8-9 as it discloses correcting the orientation of a segment of digital ink).

Ikebata does not explicitly disclose determining an mean azimuth or subtracting the current point from the mean azimuth.

Gierhart discloses finding the moving average azimuth (see figure 7a and column 17 lines 50-55) and subtracting the average value from the current point (see column 17 lines 50-64, specifically lines 61-64, where variance is described).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata the moving average azimuth calculating means as taught by Gierhart. The reason for the combination is because it makes for a more robust system

that is able to calculate the difference from the current point to an average allowing the system to identify the difference between the current point and previous points.

Ikebata and Gierhart do not explicitly disclose taking the mean of all the sampled points but the moving average of Gierhart may include all the sampled points.

Schwartz discloses finding the average tilt of all the points (see column 11 lines 1-13 which discloses finding the mean of the points).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata and Gierhart the ability to use more sampled points to create an average as taught by Schwartz. The reason for the combination is to create a more reliable average that includes more data to better predict the slant.

Ikebata, Gierhart and Schwartz do not disclose tags on a printed surface.

Sekendur discloses writing a segment by an optically imaging pen on a surface printed with tags, each tag encoding data on an identity of the surface associated with a digital description of the surface and on the respective location of the tag on the surface, the digital ink being generated by associating the digital description with the data encoded by the tags optically imaged by the pen during said writing (see figure 6 which shows an optical pen, figures 1-3 and column 4 lines 29-49 disclose that the dots have coordinate information which the computer analyzes to find the location of the pen on the paper).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata, Gierhart, and Schwartz, the location determining means as

taught by Sekundur. The reason for the combination is to make for a more robust system that can determine the location of the pen on the paper.

Regarding claim 17, Ikebata discloses that the estimated orientation of the segment of digital ink is subsequently used in a digital ink line orientation normalization technique (column 5 lines 1-4 discloses normalizing the slant angle so as to correct the orientation. This is also shown in figures 8-9).

Regarding claim 18, Ikebata discloses that a single, fixed orientation estimation is utilised for a line of digital ink (column 4 lines 40-63 discloses that a standard slant angle may be used. This standard slant angle is computed from the training data and this will act as a fixed estimation).

Regarding claim 19, Ikebata discloses that the orientation estimation that varies across a line of digital ink is utilized (in order to modify the standard angle disclosed in the rejection of claim 3, Ikebata also discloses calculating the average slant angle. In column 4 lines 40-50 and column 6- lines 7-44 he discloses calculating the average slant pattern. Therefore, in order to calculate the orientation using the average slant angle, the system must calculate the varying angle across the digital ink).

Regarding claim 20, Ikebata discloses normalizing the estimated orientation to be within the range of 0.degree. to 360.degree (Column 5 lines 59-65 discloses a slant compensation method that normalizes the digital ink by subtracting the standard slant ange, which is the average slant angle of the user, by the current angle. Column 6 discloses that the angles are between 0 and 360).

Regarding claim 21, column 6 lines 55-59 discloses that the slant angle is can be calculated for each of the input characters. This means that that the system can function for many characters.

Regarding claim 22, the examiner notes that one character can be read to be a line segment. Therefore the rejection of claim 6 discloses all aspects of claim 7.

Regarding claim 24, Ikebata discloses that the orientation estimation uses a writer independent handwriting model (column 5 lines 30-33 discloses that the system can use data from a user group or user. The user group may include as a group of left handed or right handed people.)

Regarding claim 25, Ikebata disclose that the orientation estimation uses a writer dependent handwriting model trained using sample digital ink input by the writer (column 5 line 66 to column 6 line 6 disclose learning the users writing style to create the standard slant angle).

Regarding claim 26, the figures 8-9 disclose that a consistent baseline is used to calculate the standard angle as a character is placed back on the X axis.

Regarding claim 27, Ikebata does not disclose that the input data needs to have specific characteristics, therefore, the examiner believes that the data is arbitrary.

2. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebata in view of Gierhart in view of Schwartz in view of Sekendor in further view of Parthasarathy et al. (5740273, referred to as "Parthasarathy" herein).

Regarding claim 23, Ikebataand Gierhart, Schwartz, and Sekendor disclose all aspects of claim 8 except for segmenting based on azimuth values.

Parthasarathy discloses that the line segmentation is performed by measuring a change in azimuth value (see figure 1 item 110 and column 3 lines 25-35 discloses segmenting points based on angle changes).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata, Schwartz, Sekendur and Glerhart the segmenting means as taught by Parthasarathy. The reason for the combination is because it makes for a more robust system that can find character changes by looking for extreme angle changes.

Rejection #2

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 14, 17-22, 24-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebata (6226404) in view of Gierhart et al. (5730602, referred to as "Gierhart" herein) in further view of Schwartz (6215901) and in further view of Lapstun et al. (6724374, referred to as "Lapstun" herein).

Regarding claim 14, Ikebata discloses a method of estimating the orientation of a segment of digital ink, the method including the steps of: measuring the azimuth of the

pen at a sampling rate during writer generation of the segment of digital ink (see figure 1 item 2, column 4 lines 19-28 discloses sampling rates, and column 3 lines 35-41 discloses calculating the slant angle or azimuth of the pen);

and estimating the orientation of said segment using the measured azimuth of the pen at sampled points (by calculating the slant angle the direction of the character is also calculated as disclosed in column 4 line 59 to column 5 line 4. Also, see figures 8-9 as it discloses correcting the orientation of a segment of digital ink).

Ikebata does not explicitly disclose determining an mean azimuth or subtracting the current point from the mean azimuth.

Gierhart discloses finding the moving average azimuth (see figure 7a and column 17 lines 50-55) and subtracting the average value from the current point (see column 17 lines 50-64, specifically lines 61-64, where variance is described).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata the moving average azimuth calculating means as taught by Gierhart. The reason for the combination is because it makes for a more robust system that is able to calculate the difference from the current point to an average allowing the system to identify the difference between the current point and previous points.

Ikebata and Gierhart do not explicitly disclose taking the mean of all the sampled points but the moving average of Gierhart may include all the sampled points.

Schwartz discloses finding the average tilt of all the points (see column 11 lines 1-13 which discloses finding the mean of the points).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata and Gierhart the ability to use more sampled points to create an average as taught by Schwartz. The reason for the combination is to create a more reliable average that includes more data to better predict the slant.

Ikebata, Gierhart and Schwartz do not disclose tags on a printed surface.

Lapstun discloses writing a segment by an optically imaging pen on a surface printed with tags, each tag encoding data on an identity of the surface associated with a digital description of the surface and on the respective location of the tag on the surface, the digital ink being generated by associating the digital description with the data encoded by the tags optically imaged by the pen during said writing (see figures 4a-4b and column 15 lines 20 to column 16 line 34).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata, Gierhart, and Schwartz, the location determining means as taught by Lapstun. The reason for the combination is to make for a more robust system that can determine the location of the pen on the paper.

Regarding claim 17, Ikebata discloses that the estimated orientation of the segment of digital ink is subsequently used in a digital ink line orientation normalization technique (column 5 lines 1-4 discloses normalizing the slant angle so as to correct the orientation. This is also shown in figures 8-9).

Regarding claim 18, Ikebata discloses that a single, fixed orientation estimation is utilised for a line of digital ink (column 4 lines 40-63 discloses that a standard slant

angle may be used. This standard slant angle is computed from the training data and this will act as a fixed estimation).

Regarding claim 19, Ikebata discloses that the orientation estimation that varies across a line of digital ink is utilized (in order to modify the standard angle disclosed in the rejection of claim 3, Ikebata also discloses calculating the average slant angle. In column 4 lines 40-50 and column 6- lines 7-44 he discloses calculating the average slant pattern. Therefore, in order to calculate the orientation using the average slant angle, the system must calculate the varying angle across the digital ink).

Regarding claim 20, Ikebata discloses normalizing the estimated orientation to be within the range of 0.degree. to 360.degree (Column 5 lines 59-65 discloses a slant compensation method that normalizes the digital ink by subtracting the standard slant ange, which is the average slant angle of the user, by the current angle. Column 6 discloses that the angles are between 0 and 360).

Regarding claim 21, column 6 lines 55-59 discloses that the slant angle is can be calculated for each of the input characters. This means that that the system can function for many characters.

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Regarding claim 25, Ikebata disclose that the orientation estimation uses a writer dependent handwriting model trained using sample digital ink input by the writer (column 5 line 66 to column 6 line 6 disclose learning the users writing style to create the standard slant angle).

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4. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebata in view of Gierhart in view of Schwartz in view of Lapstun in further view of Parthasarathy et al. (5740273, referred to as "Parthasarathy" herein).

Regarding claim 23, Ikebataand Gierhart, Schwartz, and Sekendor disclose all aspects of claim 8 except for segmenting based on azimuth values.

Parthasarathy discloses that the line segmentation is performed by measuring a change in azimuth value (see figure 1 item 110 and column 3 lines 25-35 discloses segmenting points based on angle changes).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Ikebata, Lapstun, Schwartz and Glerhart the segmenting means as taught by Parthasarathy. The reason for the combination is because it makes for a more robust system that can find character changes by looking for extreme angle changes.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang et al. (2004/0086181).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HADI AKHAVANNIK whose telephone number is (571)272-8622. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jingge Wu/
Supervisory Patent Examiner, Art Unit 2624

HA
3/9/09